CLAIMS

What is claimed is:

1. A display system for transmitting and receiving picture or video images between one or more remote devices and a host display communicating on a UWB wireless network, the display system comprising:

the host display comprising:

a display for presentation of the picture or video images; and

a UWB image transceiver for wirelessly receiving the picture or video images for presentation on the display, and for selectively transmitting picture or video images based on receipt of an image selection request from one of the remote devices; and

the one or more remote devices comprising:

a digital camera unit for capturing a picture or video image; and

a UWB image transceiver, the one or more remote devices operable to wirelessly transmit captured picture or video images to the host display and to selectively receive picture or video images from the host display based on generating and transmitting the image selection request to the host display;

wherein one or more of the remote devices capture and transmit a picture or video image to the host display, and wherein upon receipt of an image selection request, the host display transmits the displayed image to the wireless video network, the image subsequently received by the requesting remote device on the network.

2. The display system of claim 1, wherein the one or more of the remote devices comprise:

a local display for presentation of a picture or video image; and

a UWB child transceiver, the one or more remote devices operable to wirelessly retransmit stored picture or video images to the host display and to

selectively receive picture or video images from the host display based on generating and transmitting the image selection request to the host display.

3. The display system of claim 2, wherein the digital camera unit of one or more of the remote devices is operable to capture live video images.

4. The display system of claim 3, wherein the host display system and the remote device is operable to communicate and display the live video images.

5. The display system of claim 1, wherein the host display and the one or more remote devices are operable to communicate using a UWB signal directly between one another exclusive of a wide area network.

6. The display system of claim 5, wherein the host display is operable to directly upload and display the picture or video images from one of the remote devices.

7. The display system of claim 6, wherein the host display is operable to directly upload and display the picture or video images from one of the wireless telephones.

8. The display system of claim 1, wherein the one or more remote devices are one or more wireless telephones.

9. The display system of claim 8, wherein one or more of the wireless telephones is operable to receive the picture or video images using a UWB signal directly from another of the wireless telephones.

10. The display system of claim 8, wherein one or more of the wireless telephones have a digital camera unit, the wireless telephone operable to transmit the picture or video images.

11. The display system of claim 10, wherein one of the wireless telephones is operable to receive and display the picture or video images captured by the digital camera unit downloaded directly from the host display using a UWB signal.

12. The display system of claim 9, wherein one of the wireless telephones is operable to directly download and display the picture or video images using the UWB signal directly from the host display or from one of the wireless telephones.

13. The display system of claim 1, wherein the host display comprises one of a television, PC, or video projector for display of one or more picture or video images uploaded from one of the remote devices.

14. The display system of claim 13, wherein the host display comprises one of an LCD, CRT, Plasma, flat panel, and DLP display technology.

15. The display system of claim 1, wherein the UWB image transceiver comprises:

a memory for temporarily storing the picture and video images as image data captured by the digital camera unit and for presentation by the host display and the local display;

a picture processing unit for compressing the image data stored in the memory, and for support of the graphics user interface of the host and local display;

a UWB MAC unit for support of the UWB protocol used to sense the UWB host and synchronize communications with the host, to set up a communication link between the host and one of the remote devices for uploading and downloading the picture and video image data to and from the host, respectively; and

a UWB PHY unit having baseband and RF hardware coupled to an antenna and used to send and receive UWB signals;

wherein in the remote device, the digital camera unit, the local display, and the picture processing unit are operably coupled to the memory, the picture processing unit is operably coupled to the UWB MAC unit, the UWB MAC unit is coupled to the UWB PHY unit, which is also connected to the antenna,

wherein in the host display, the large display, and the picture processing unit is operably coupled to the memory, the picture processing unit is operably coupled to the UWB MAC unit, the UWB MAC unit is coupled to the UWB PHY unit, which is also connected to the antenna,

wherein in one of the remote devices, image data from the digital camera unit is stored in the memory for image presentation on the local display and is selectively transmitted to the host display by passing image data from the memory to the picture processing unit for image data decompression, which is sent to the UWB MAC unit for synchronization in accordance with the UWB protocol and to the UWB PHY unit for UWB baseband addition and RF modulation of the UWB signal and to the antenna for transmission to the host display; and

wherein in the host display, image data from the digital camera unit is received in the UWB image transceiver over the RF modulated baseband of the UWB signal *via* the antenna of the UWB PHY unit into the UWB MAC unit for synchronization in accordance with the UWB protocol for communication to the picture processing unit for image data compression and storage in the memory for image presentation on the large display of the host display, the UWB image transceiver of the host display operable to selectively retransmit the captured picture or video images to the remote devices based on generating and transmitting an image selection request to the host display.

16. A wireless device for directly communicating picture or video images over a UWB wireless signal with a host display or another wireless device, the wireless device comprising:

a display for local presentation of the picture or video images; and

a UWB image transceiver selectively operable to receive or transmit the picture or video images over a UWB wireless signal directly communicating with another wireless device based on receipt of an image selection request from the receiving wireless device;

wherein one of the wireless devices captures and transmits the picture or video images to another wireless device or a host display, and wherein upon receipt of an image selection request, the host display transmits the displayed picture or video images directly over a UWB wireless signal to the requesting wireless device.

17. The wireless device of claim 16, further comprising a digital camera unit for capturing the picture or video images for communication with the host display or another wireless device using the UWB wireless signal.

18. The wireless device of claim 16, further comprising a wireless telephone having a microphone and a speaker for two-way audio communications with another wireless device using a cellular network.

19. The wireless device of claim 16, wherein the wireless device is a cellular telephone.

20. The wireless device of claim 16, wherein the host display has a substantially larger display than the display of the wireless device.

21. A wireless telephone for directly communicating picture or video images over a UWB wireless signal with a host display or another wireless telephone, the wireless telephone comprising:

a display for local presentation of the picture or video images; and

a UWB image transceiver selectively operable to receive or transmit the picture or video images over a UWB wireless signal directly communicating with

another wireless telephone based on receipt of an image selection request from the receiving wireless telephone;

wherein one of the wireless telephones captures and transmits the picture or video images to another wireless telephone or a host display, and wherein upon receipt of an image selection request, the host display transmits the displayed image to the wireless video network, the image subsequently received by the requesting remote device on the network.

22. The wireless telephone of claim 21, further comprising a digital camera unit for capturing the picture or video images for transmission to the host display or another wireless telephone.

23. The wireless telephone of claim 22, further comprising a microphone and a speaker for two-way audio communications with another wireless telephone using a cellular network.

24. The wireless telephone of claim 21, wherein the wireless telephone is a cellular telephone and the host display is a television.

25. The wireless telephone of claim 21, wherein the host display has a substantially larger display than the local display.

26. A wireless telephone for communicating picture or video images over a UWB wireless signal, the wireless telephone comprising:

a digital camera unit for capturing the picture or video images;

a local display for local presentation of the captured picture or video images; and

a UWB image transceiver selectively operable to transmit or receive the captured picture or video images over a UWB wireless signal directly communicating with a host display, the receiving of the picture or video images

based on receipt by the host display of an image selection request from the wireless telephone;

wherein the wireless telephone captures the picture or video images for display on the local display and selectively transmits the picture or video images to the host display, and wherein upon subsequent receipt of an image selection request from the wireless telephone or another wireless telephone, the host display retransmits the displayed image to the requesting wireless telephone over a UWB wireless signal.

27. The wireless telephone of claim 26, further comprising a microphone and a speaker for two-way audio communications with another wireless telephone using a cellular network.

28. The wireless telephone of claim 26, wherein the UWB image transceiver comprises:

a memory for temporarily storing the picture and video images as image data captured by the digital camera unit and for presentation by the host display and the local display;

a picture processing unit for compressing the image data stored in the memory, and for support of the graphics user interface of the host and local display;

a UWB MAC unit for support of the UWB protocol used to sense the UWB host and synchronize communications with the host, to set up a communication link between the host and one of the remote devices for uploading and downloading the picture and video image data to and from the host, respectively; and

a UWB PHY unit having baseband and RF hardware coupled to an antenna and used to send and receive UWB signals;

wherein in the wireless telephone, the digital camera unit, the local display, and the picture processing unit are operably coupled to the memory, the

picture processing unit is operably coupled to the UWB MAC unit, the UWB MAC unit is coupled to the UWB PHY unit, which is also connected to the antenna,

wherein in the wireless telephone, image data from the digital camera unit is stored in the memory for image presentation on the local display and is selectively transmitted to the host display by passing image data from the memory to the picture processing unit for image data decompression, which is sent to the UWB MAC unit for synchronization in accordance with the UWB protocol and to the UWB PHY unit for UWB baseband addition and RF modulation of the UWB signal and to the antenna for transmission to the host display.

29. The wireless telephone of claim 26, wherein the host display has a substantially larger display than the local display.

30. The wireless telephone of claim 26, wherein the wireless telephone is a cellular telephone and the host display is a television.

31. A wireless digital camera for transmitting or receiving a picture or video images over a UWB wireless signal in direct communication with a host display, the wireless digital camera comprising:

a digital camera unit for capturing the picture or video images;

a local display for presentation of the picture or video images; and

a UWB image transceiver selectively operable to communicate directly with the host display over a UWB wireless signal based on receipt of an image selection request from the receiving wireless digital camera to transmit or receive the captured picture or video images;

wherein the wireless digital camera captures and transmits the picture or video images to the host display, and wherein upon receipt of an image selection request, the host display retransmits the displayed image to the wireless digital camera over a UWB wireless signal.

32. The wireless digital camera of claim 31, wherein the UWB image transceiver comprises:

a memory for temporarily storing the picture and video images as image data captured by the digital camera unit and for presentation by the local display;

a picture processing unit for compressing the image data stored in the memory, and for support of the graphics user interface of the local display;

a UWB MAC unit for support of the UWB protocol used to sense the UWB host and synchronize communications with the host, to set up a communication link between the host and digital camera for uploading and downloading the picture and video image data to and from the host, respectively; and

a UWB PHY unit having baseband and RF hardware coupled to an antenna and used to send and receive UWB signals;

wherein the digital camera unit, the local display, and the picture processing unit are operably coupled to the memory, the picture processing unit is operably coupled to the UWB MAC unit, the UWB MAC unit is coupled to the UWB PHY unit, which is also connected to the antenna,

wherein image data from the digital camera unit is stored in the memory for image presentation on the local display and is selectively transmitted to the host display by passing image data from the memory to the picture processing unit for image data decompression, which is sent to the UWB MAC unit for synchronization in accordance with the UWB protocol and to the UWB PHY unit for UWB baseband addition and RF modulation of the UWB signal and to the antenna for transmission to the host display.

33. A wireless display device for displaying picture or video images on a host display, the image data received over a UWB wireless signal directly from a UWB remote device, the wireless display device comprising:

the host display for presentation of the picture or video images; and

a UWB image transceiver selectively operable to receive or transmit the picture or video images over a UWB wireless signal directly communicating with

the UWB remote device based on receipt of an image selection request from the remote UWB device;

wherein the remote UWB device captures and transmits the picture or video images to the wireless display device, and wherein upon receipt of an image selection request, the wireless display device transmits the displayed picture or video images directly over a UWB wireless signal to the requesting UWB remote device.

34. The wireless display device of claim 33, wherein the wireless display device is a television.

35. The wireless display device of claim 33, wherein the wireless display device comprises one of a television, PC, or video projector for display of one or more picture or video images uploaded from the remote device.

36. The wireless display device of claim 35, wherein the host display comprises one of an LCD, CRT, Plasma, flat panel, and DLP display technology.

37. The wireless display device of claim 33, wherein the wireless display device has a substantially larger display than the display of the remote UWB device.

38. The wireless display device of claim 33, wherein the UWB image transceiver comprises:

a memory for temporarily storing the picture and video images as image data captured by a digital camera unit and for presentation by the host display;

a picture processing unit for compressing the image data stored in the memory, and for support of the graphics user interface of the host display;

a UWB MAC unit for support of the UWB protocol used to sense the UWB host and synchronize communications with the host, to set up a communication link between the host and one of the remote devices for uploading and

downloading the picture and video image data to and from the host, respectively; and

a UWB PHY unit having baseband and RF hardware coupled to an antenna and used to send and receive UWB signals;

wherein the host display and the picture processing unit are operably coupled to the memory, the picture processing unit is operably coupled to the UWB MAC unit, the UWB MAC unit is coupled to the UWB PHY unit, which is also connected to the antenna, and

wherein in the host display, image data from the digital camera unit is received in the UWB image transceiver over the RF modulated baseband of the UWB signal *via* the antenna of the UWB PHY unit into the UWB MAC unit for synchronization in accordance with the UWB protocol for communication to the picture processing unit for image data compression and storage in the memory for image presentation on the large display of the host display, the UWB image transceiver of the host display operable to selectively retransmit the captured picture or video images to the remote devices based on generating and transmitting an image selection request to the host display.

39. A method of communicating picture or video images over a UWB wireless signal directly between a cellular telephone and a host display of a display system, the method comprising:

transmitting an initial access request from the cellular telephone to the host display, requesting an upload of the picture or video images;

waiting for readiness of the host display;

transmitting from the host display to the cellular telephone, an acceptance for the upload;

uploading the picture or video images over the UWB wireless signal to the host using a UWB time-slot assigned by the host;

storing the picture or video images in a host memory of the host display;

accessing the host memory; and

displaying the picture or video images on the host display.

40. The method of claim 39, further comprising:

transmitting an image download request to the host display from a requesting cellular telephone, requesting a download of the picture or video images currently displayed on the host display;

waiting for an acknowledgement from the host display for the download;

transmitting to the requesting cellular telephone, the acknowledgement for the download;

downloading the picture or video images over the UWB wireless signal to the requesting cellular telephone using a UWB time-slot assigned by the host;

receiving and storing the picture or video images in a local memory of the requesting cellular telephone;

accessing the local memory; and

displaying the picture or video images on a local display of the requesting cellular telephone.

41. The method of claim 40, wherein the downloading of the picture or video images from the host is simultaneously downloaded to one or more requesting cellular telephones.

42. The method of claim 40, wherein the receiving and storing of the picture or video images downloaded from the host display is simultaneously received and stored in the local memory of one or more requesting cellular telephones.

43. The method of claim 39, further comprising:

capturing the picture or video images using a digital camera unit prior to transmitting the initial access request from the cellular telephone to the host display.